

**CALIPSO**

**MISSION CONTINUOUS RISK MANAGEMENT (CRM)**

**PLAN**

**February 2002**

**LANGLEY RESEARCH CENTER**

**HAMPTON, VIRGINIA**

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## CALIPSO

## CRM PLAN

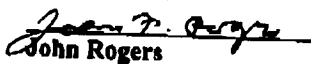
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## 1.0 Introduction

Risk is defined as an undesirable situation or circumstance that has a realistic probability of occurring and an unfavorable consequence on the overall mission success. Continuous Risk Management is a systematic decision-making process that efficiently identifies risks, assesses, prioritizes, and effectively reduces or mitigates risks to achieve mission goals.

The Mission risk management process is an integral part of the overall mission management, will provide a disciplined and documented approach to risk management throughout the Mission life cycle. It will support management decision-making by providing integrated risk assessments (taking into account safety, cost, schedule and performance concerns), and communicate to management and the Project team, the significance of assessed risk levels and the decisions made with respect to them.

NASA and CNES manage their respective mission and/or product assurance activities according to their own standards

### 1.1 Purpose

The purpose of this document is to describe the CALIPSO CRM process for integrating Mission Level Risks identified through NASA and CNES and their contractors and subcontractors.

### 1.2 Scope

This document includes all aspects of the CALIPSO Mission, the Payload and the Platform. The CALIPSO Project partners, NASA and CNES, and their contractors, will use their internal CRM process to identify risks. Their risks affecting inter-organizational mission elements will be integrated directly into the CALIPSO Mission Risk Management Data Base. The process to transfer and communicate risks between NASA and CNES is illustrated in Appendix B, Figure B-1.

## 2.0 Risk Management Process

The CALIPSO Mission Risk management process consists of:

1. **Integrating** the potential mission level risks identified through the NASA and CNES internal risk management processes. The internal risk management process for NASA and CNES shall identify risks to the payload and to the platform, their interfaces. Some of these risks may affect the mission as whole, i.e. Launch Delay. These kinds of risks will be handled at the Mission Level.
2. **Assessing** risks in terms of their impacts on project resources (budget, mass, power, schedule, memory, performance, etc.), their likelihood of occurrence, their sensitivity to program, product and process assumptions, and their degree of correlation to other risks will be done by CALIPSO Mission Project Management and the Mission Risk Manager.

3. **Mitigating** the risks in terms of those that require immediate action, they will become a problem in less than a month if no actions are taken to mitigate the risk; those that require a mitigation plan, they will become a problem between 1 to 6 months if no actions are taken to mitigate the risk; and those that will be monitored for changes in their status. The CALIPSO Mission Project Management will assign the risks to the NASA LaRC System Engineer, the CNES System Engineer or both to develop the risk mitigation strategy and to implement it.
4. **Tracking** documents and reporting risk status throughout the Mission lifecycle will be the responsibility of the NASA LaRC System Engineer or the CNES System Engineer. The CALIPSO Risk Manager will support this activity. Updates to the Mission Level risks will be done during the Mission teleconference, schedule every week.
5. **Controlling** the risks by evaluating the progress of the action/mitigation plans and closing the risks when they are not a threat to the Mission. This is a responsibility of the CALIPSO Mission Project Management level, shared between NASA and CNES.

The CALIPSO Mission risk management process is shown in Appendix B, Figure B-2.

### **3.0 Roles and Responsibilities**

#### **CALIPSO Mission Project Manager;**

- Owner of the Risk Management Process
- Reviews and approves all risks and their mitigation strategies that affect Mission requirements, MOU and/or PCA
- Approves mitigation Strategies for High and Medium risks
- Approves retirement of all the Mission risks

#### **NASA LaRC CALIPSO Project Manager;**

- Reviews all NASA LaRC internal risks
- Allocates funds and resources to mitigate risks
- Reviews risk mitigation strategies
- Assigns the owner for NASA related risks
- Submit a periodic CNES internal risk list, summary, to the CALIPSO Mission Risk Manager

#### **CNES CALIPSO Project Manager;**

- Reviews all CNES internal risks
- Allocates funds and resources to mitigate risks
- Reviews risk mitigation strategies
- Assigns the owner for CNES related risks
- Submit a periodic CNES internal risk list, summary, to the CALIPSO Mission Risk Manager

**Mission Risk Manager;**

- Controls and maintains the risk database
- Assists in tracking risks and generating reports
- Presents all new risks at Project reviews (weekly or monthly)

**Systems Engineering (NASA LaRC or CNES);**

- Conducts required analyses
- Supports status reviews
- Develops, reviews, and supports risk mitigation strategies
- Executes the mitigation strategies
- Maintains report status of the risk(s)
- Keeps the database up-to-date

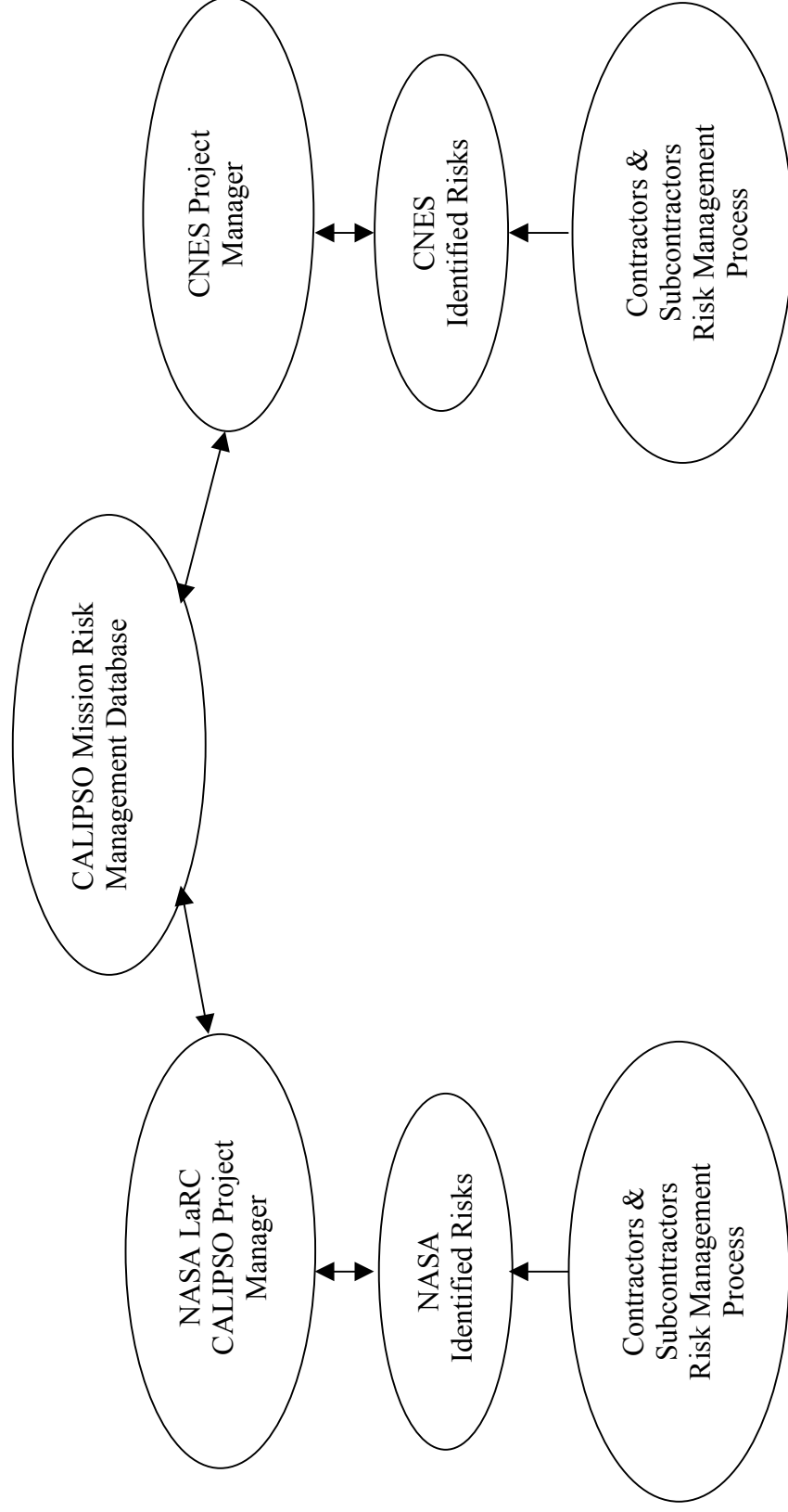
## **Appendix A - Acronyms**

This appendix contains an alphabetical list of all acronyms used in this document.

CALIPSO	Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations
CNES	Centre National d'Etudes Spatiales
CRM	Continuous Risk Management
ESSP	Earth System Science Pathfinder
GSFC	Goddard Space Flight Center
LaRC	Langley Research Center
MOU	Memorandum of Understanding
NPG	NASA Procedures and Guidelines
NASA	National Aeronautics and Space Administration
PCA	Program Commitment Agreement



## **Appendix B Figures**



**Figure B-1 Process for Communicating & Transferring Mission Level Risks between NASA and CNE**

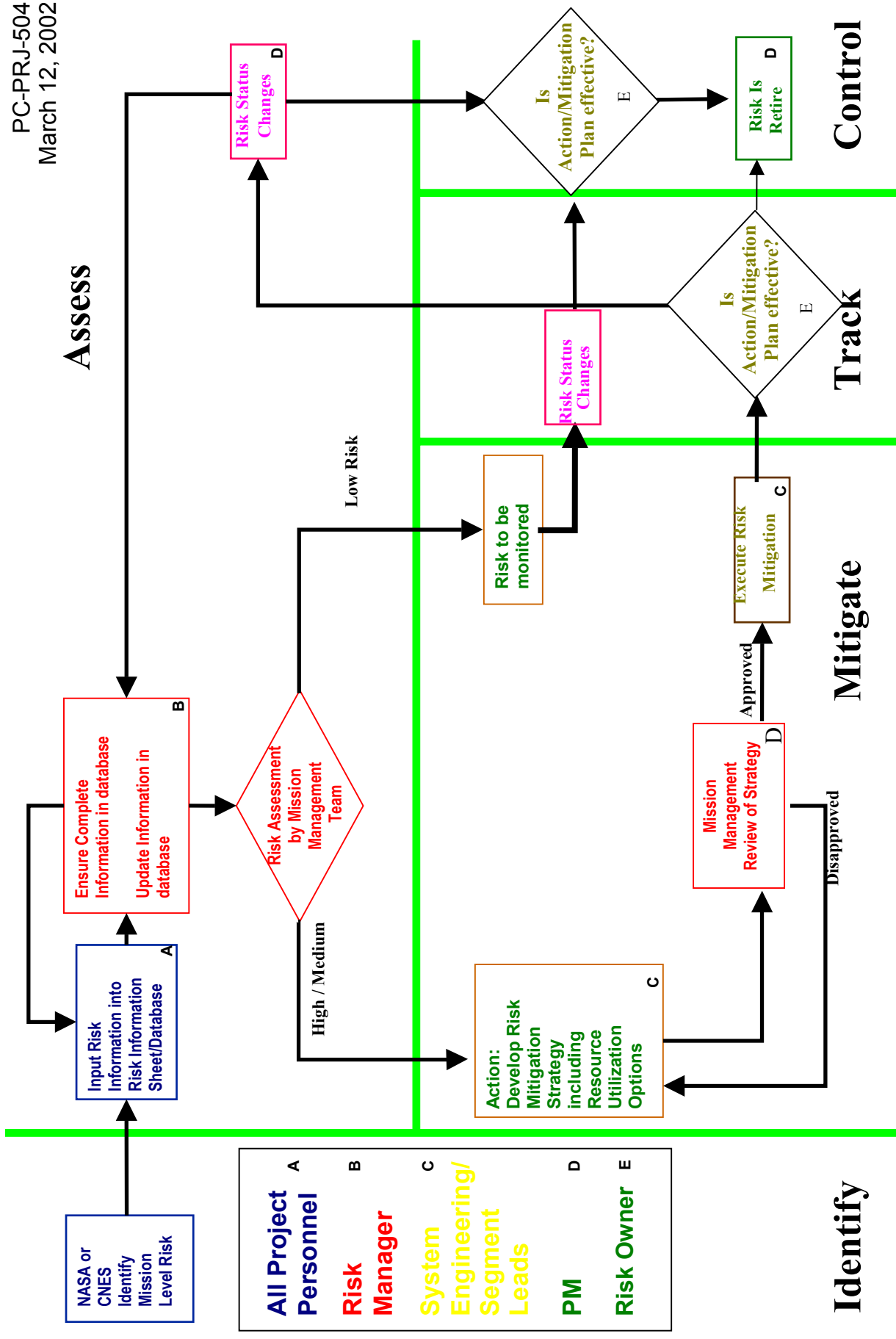


Figure B-2 Mission Level Risk Management Process Flow